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Pruthikrai Mahatanankoon  
*Illinois State University*, [pmahata@ilstu.edu](mailto:pmahata@ilstu.edu)

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# 28P. Exploring the Impact of Instant Messaging on Job Satisfaction and Creativity

Pruthikrai Mahatanankoon  
Illinois State University  
[pmahata@ilstu.edu](mailto:pmahata@ilstu.edu)

## ***Abstract***

Instant messaging (IM) is prevalent among employees who prefer efficient, semi-synchronous communications. This study focuses on instant messaging and electronic communication autonomy in the workplace by examining its impact on job satisfaction and creativity. The study finds, based on a linear regression, that electronic communication autonomy influences job satisfaction and creativity, specifically revealing that instant messaging leads to creativity but negatively influences job satisfaction. These findings provide insights to assist in comprehending and managing personal electronic communication in the workplace.

## ***Keywords***

Instant messaging, creativity, job satisfaction, informal communication, workplace communication, perceived freedom

## **1. Introduction**

Instant messaging (IM) is becoming another option by which employees may communicate within and beyond the workplace. It offers the convenience, flexibility and efficiency of non-face-to-face communication. Although it is relatively new when compared to the worldwide adoption of e-mail, instant messaging is becoming increasingly popular among employees because of how it augments and plays off of existing organizational social networks. Evidence suggests that electronic social networks within organizations positively correlate with productivity (Wu et al., 2009). Employees also find IM more efficient, less disruptive and less time-consuming than other forms of electronic workplace communications (Garrett & Danziger, 2008). Employees and employers realize the benefits of IM, which can serve as a valuable communication medium when rapid response is required.

Nonetheless, IM can lead to negative consequences, especially when employees utilize it for non-work-related or personal purposes. Swartz (2005) found that 57% of employees used IM at work for personal communications and recommended that companies monitor employee IM usage. In 2006, the ePolicy Institute ([www.epolicyinstitute.com](http://www.epolicyinstitute.com)) and American Management Association ([www.amanet.org](http://www.amanet.org)) revealed that 35% of employees used IM at work for sending or receiving improper file attachments (26%), confidential information (12%), offensive remarks (24%), and sexually related content (10%). Furthermore, IM requires communicating parties to download and install freely available client IM software. The process of downloading client software and text-based message logging features could lead to viruses, malicious spyware and legal liability for companies (Primeaux & Flint, 2004). Given its drawbacks, companies would do well to create proper usage policies and educate employees as to security and legal issues involving IM usage (Flynn, 2004).

To evaluate the advantages or disadvantages of IM in the workplace, the *purpose of this study* is to examine how electronic communication autonomy (ECA) and personal instant messaging (P-IM) behaviors affect employees' job satisfaction and creativity. It seeks to explore the following research questions: 1) Does freedom of workplace electronic communication (ECA) impact employee job satisfaction (JS) and job creativity (JC)? (2) Does personal instant messaging (P-IM) increase employees' job satisfaction (JS) and job creativity (JC)? (3) Does job satisfaction (JS) lead to job creativity (JC) among employees who experience communication autonomy? An empirical investigation of the effects that ECA and P-IM have on employees and organizations can assist companies in their determinations as to whether to enforce tougher strategies to manage workplace electronic communications. The following sections describe the theoretical basis of this study.

## 2. Theoretical Framework

Empirical evidence has suggested that companies can increase job satisfaction and job creativity by providing work autonomy and building informal relationships (McCloskey, 1990). The theoretical basis of this study incorporates electronic communication autonomy and personal instant messaging as surrogates for job autonomy. Figure 1 shows the proposed research model and its underlying constructs.

### 2.1 Conceptual Definitions

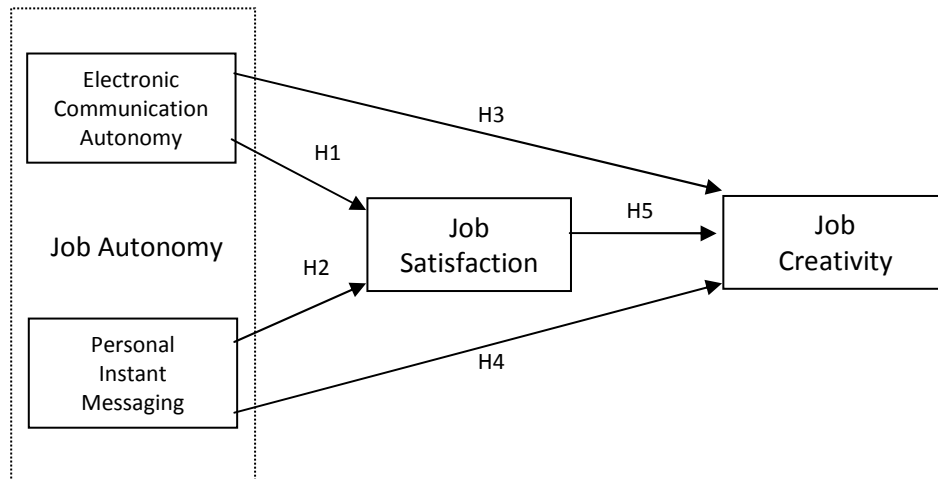
Job autonomy is defined as the “degree of control or discretion a worker is able to exercise with respect to work methods, work scheduling, and work criteria” (Breaugh, 1985, p. 556). In other words, job autonomy is the employees' freedom to choose their work procedures, their flexibility to schedule their activities, and their ability to self-evaluate their performance (Breaugh, 1985). By analogy, the concept of job autonomy assists in the articulation of the definition of *electronic communications autonomy* (ECA), which is defined as the degree of autonomy that an employee has over his/her methods, time (i.e., duration and frequency) and criteria of electronic communication. ECA *methods* refer to the procedures by which one decides to use information and communication technologies (e.g., e-mail, IM, SMS, etc.), while the *criteria* of ECA refers to how one feels obligated to comply with organizational usage policies and deterring strategies. The condition of being autonomous also allows *personal instant messaging* (P-IM) to occur—non-work-related electronic communications that occur within or beyond the workplace setting.

Having the autonomy to choose an appropriate communication medium to achieve desired work or social outcomes, employees are free to utilize information and communication technologies (ICTs) as they see fit. This freedom, as the study postulates, should heighten employees' job satisfaction and creativity. *Job satisfaction* is defined as “a pleasurable or positive emotional state resulting from the appraisal of one's job or job experiences” (Locke, 1976, p. 1300), while *job creativity* is defined as the ability to develop new ideas and experiment with new methods to do work. For example, employees may decide to use instant messaging as an innovative technology to exchange ideas or attend meetings.

### 2.2 Research Hypotheses

Research has shown that a moderate correlation exists between job autonomy and job satisfaction (Blegen, 1992). In various cross-cultural studies, job autonomy has been shown to be an important ingredient in the recipe for job satisfaction. Finn (2001) found that work autonomy among registered nurses in Australia led to increased job satisfaction. When

comparing salespersons from the U.S., Australia and India, DeCarlo & Agarwal (1999) concluded that job autonomy was an important predictor of job satisfaction. In Canada, shopping center managers reported high job satisfaction and performance when given autonomy in performing their duties (Dart, 1988). A study among expatriates showed that job autonomy, as well as job feedback, increased the job satisfaction of guest salespersons working in Saudi Arabia (Manguc & Bhuian, 2004).



**Figure 1:** Proposed Research Model

Since utilitarian/hedonic beliefs, social norms, critical mass and ease of use are predictors of IM activities (Premkumar, Ramamurthy & Liu, 2008), these factors can create a “spillover” effect that blends work-related IM activities with social and recreational needs (Rouibah, 2008). The combination of autonomy and informal relationships promotes workplace satisfaction (McCloskey, 1990). This effect also holds true among information technology professionals, according to Lim’s (2008) finding that a sense of belonging, peer acceptance, and job autonomy promote job satisfaction. Therefore, it seems reasonable to predict that the expansion of one’s capability to freely communicate with fellow employees will enhance job satisfaction.

*H1: Electronic communication autonomy increases job satisfaction.*

*H2: Personal instant messaging increases job satisfaction.*

Researchers agree that a positive relationship between autonomy and creativity exists (Deci, Connell & Ryan, 1989). The use of information communication technologies (ICTs) to augment creativity is prevalent in experimental learning, distance education and musical training (Pauleen, Marshall & Egort, 2004; Ward, 2009). Wheeler, Waite & Bromfield (2002) investigate the potential of ICTs to improve problem-solving skills, creative thinking and social interaction among primary school students. ICTs also promote creativity among educators by attracting them to professional development activities (Loveless, Burton, & Turvey, 2006). When face-to-face interaction is not physically possible, e-mail communications during product development enhance creativity and reduce product development time (Ganesan, Malter and Rindfleisch, 2005).

Informal use of information communication technologies may even strengthen social bonds among employees and enhance job creativity. As rapid-networked computers and Internet-enabled communication devices liberate employees from their physical work environment, the advancement of ICTs also allows them to engage in various online communications with colleagues, friends or family members. Instead of conversing face-to-face, employees have the autonomy to choose a media that best fits their needs, time, media richness, and situational context. IM can be used to share ideas as well as to improve social connections through information gathering (Cho, Trier & Kim, 2005). According to Dewett (2003), “the ability of information technology to overcome traditional communication patterns in [organizational] hierarchies benefits creativity” (p. 170). Based on these rationales, this study hypothesizes that informal and enhanced social connections—fostered by ECA and P-IM—boost employees’ job creativity.

*H3: Electronic communication autonomy increases job creativity.*

*H4: Personal instant messaging increases job creativity.*

Previous empirical findings have also revealed a relationship between job satisfaction and creativity. Kim, Hon & Crant (2009) found that creativity serves as a mediated link between proactive employees and career satisfaction. Job satisfaction has been found to have a tendency to bring forth positive emotions, as positive mood affects employee creativity (Barsade, 2007). Job satisfaction and creativity are related in occupations that require decision autonomy. For example, Duffy & Richard (2006) revealed that physicians’ job satisfaction was also linked to accomplishment, creativity, income, security and autonomy. Higher job satisfaction and organizational commitment have been found in jobs that necessitate creativity (Shalley, Gilson & Blum, 2000).

*H5: Job satisfaction increases job creativity.*

### **3. Methods**

#### **3.1 Data Collection**

A client mailing list from an equipment rental company operating in the state of Illinois, USA, was used to recruit 1,140 white-collar employees to be participants in the study. The targeted population received e-mails pointing to a web-based survey. Approximately 10 percent of the employees responded by taking the survey. The 115 respondents (83.5% full-time employees) fell into the following job categories: administrative/clerical (29.6%), technician/first line supervisors (18.3%), professional (31.3%), managerial/executive (20.9%). Sixty percent of the respondents were female. The tenure of respondents with current employers was 0-2 years, 41.7%; 3-5 years, 20.0%; and 6-10 years, 25.2%.

#### **3.2 Instruments and Measurement Testing**

The survey instrument consisted of four modified scales. *Electronic communication autonomy* (ECA) was measured according to the individual’s freedom to engage in leisure activities—a subset of the subjective leisure scale that was developed by Unger and Kernan (1983). The *personal instant messaging* (P-IM) measure asked respondents to indicate the number of times per week they engaged in personal instant messaging. The scale ranged from the minimum (i.e., “none at all,” “1-2 times per week,” “3-4 times per week,”...) to a maximum of “11-15 times per week” or “more than 16 times per week.” Rich’s (1997) *job satisfaction* (JS) scale was modified to fit the context of personal communication. Ganesan

and Weitz's (1996) creativity scale was also modified to capture *job creativity* (JC). Appendix A supplies the measurement instruments used in the study.

Instrument and hypothesis testing were based on the guidelines of first generation linear regression models recommended by Gefen, Straub and Boudreau (2000). Instrument testing involves the examination of reliability and construct validity (Straub, 1989). A Cronbach's Alpha value of .70 or higher demonstrates internal consistency (Nunnally, 1978), while "clean" and significant factor loading of each construct signifies construct validity (Straub, 1989). Based on a significant level of .05 and a power level of 80 percent, the test of the measurement instruments revealed a factor loading value higher than .55 (n=100) among items and their designating constructs. Table 1 demonstrates the good measurement properties of the variables used in this study.

Construct	Item	Factors				Cronbach's $\alpha$
		1	2	3	4	
Electronic Communication Autonomy (ECA)	ECA1	<b>.857</b>	-.050	-.022	.100	.814
	ECA2	<b>.826</b>	.051	.198	.160	
	ECA3	<b>.814</b>	.070	.197	.158	
Personal Instant Messaging (P-IM)	P-IM1	.045	<b>.947</b>	-.129	.114	.931
	P-IM2	.008	<b>.953</b>	-.116	.107	
Job Satisfaction (JS)	JS1	.027	-.157	<b>.832</b>	.087	.818
	JS2	.154	.013	<b>.827</b>	.041	
	JS3	.162	-.132	<b>.862</b>	.077	
Job Creativity (JC)	JC1	.139	.193	.091	<b>.893</b>	.913
	JC2	.167	-.014	.133	<b>.919</b>	
	JC3	.132	.090	.002	<b>.901</b>	

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization (6 iterations)

**Table 1:** Factor Analysis and Construct Reliabilities

### 3.3 Results

Collinearity diagnostic and linear regression analyses were performed on the survey results. The average VIF of the predictor variables was close to 1—a confirmation that collinearity was not a problem for the proposed model. The results of the linear regression showed that 13 percent of the variances in JS were predicted by ECA and P-IM. In other words, the combination of instant messaging and electronic communication autonomy accounted for 13 percent of the variance in job satisfaction. However, JS had no significant effect on JC—nearly 16 percent of the variance in JC was mainly predicted by ECA and P-IM—thus, H5 is rejected. To gain additional insights, squared zero-order correlations revealed that nearly 8 and 11 percent of explained variances in JS and JC were accounted for by ECA, respectively. However, personal instant messaging explained only 5 percent of JS variance and 4 percent of JC variance. Table 2 and Figure 2 illustrate the results of the study.

## 4. Discussion and Implications

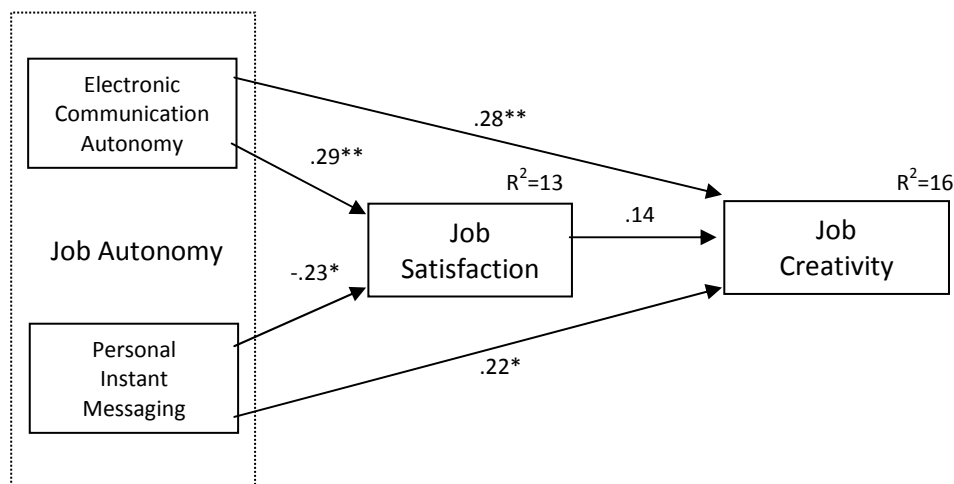
With reference to the three research questions listed above, the study demonstrates the influence that ECA has on JS and JC. ECA appears in fact to enhance decision-making and provide employees with a personal virtual space they find useful in today's workplace. Based on these results, companies that are currently monitoring employees' behavior may consider applying a less obtrusive approach in controlling personal informal communication. For example, while it is appropriate to broadcast an organizational electronic communication policy and to apply a "no privacy assumption" rule as a subtle deterrent, other surveillance or

monitoring strategies—as identified in the electronic communication policy—should be used when personal aggression or deviant behavior is suspected or reported in some severe cases, e.g., such as harassment, defamation, libel, information or knowledge espionage, and so on.

Causal Paths	DV	F (R <sup>2</sup> )	IV	Coefficient (t-value)	Average VIF	Hypothesis Testing
Path #1	JS	8.47*** (.13)	ECA P-IM	.294 (3.33**) -.229 (-2.59*)	1.003	H1: supported H2: supported
Path #2	JC	6.89*** (.16)	ECA P-IM JS	.277 (3.03**) .216 (2.40*) .135 (1.44)	1.105	H3: supported H4: supported H5: reject

\*p<.05; \*\*p<.01; \*\*\*p<.001

**Table 2:** Causal Path Findings via Linear Regression Analysis



**Figure 2:** Results from Hypothesis Testing

The results demonstrate that P-IM has a negative effect on JS. Among various workplace characteristics, job satisfaction is a key variable that strongly influences organizational commitment (Igbaria & Greenhaus, 1992). Poor ICT infrastructure or barren norms of ICT usage can alter employees’ perception of a productive workplace. The study, therefore, raises cautions concerning the use of personal instant messaging in the workplace. Given the medium’s subtlety, which means that it often remains undetectable by managers, employees could be engaging in personal instant messaging during work hours without being detected. Gossip, personal dissatisfaction, inappropriate humor, ridicule or entertainment content may circulate without company knowledge or consent. On the other hand, P-IM positively affected JC, but its marginal advantages may not outweigh its negative influence on JS. For these reasons, companies would do well to have stricter policies to monitor personal instant messaging behavior.

Nevertheless, the freedom to effectively utilize ICTs in the workplace should help bolster employee creativity—ECA and P-IM positively influence JC. The key to enforce proper usage behaviors may be through monitoring and “managerial expectations” (Stanton & Weiss, 2000). Based on the definition of ECA as described in the earlier section, companies can create an electronic communication policy that incorporates three facets of appropriate

usage based on *method*, *duration/frequency*, and *criteria*. An example of proper instant messaging may be as follows:

- *Work-related* instant messaging is permissible for workplace meetings when face-to-face meetings are not feasible due to physical or budgetary constraints [methods].
- Employees may engage in *non-work-related* instant messaging during break periods but this usage should not last more than one hour per day [duration and frequency].
- Employees should not assume that their communication is private [criterion].

JS does not lead to JC as hypothesized, which suggests that JS does not mediate the relationship between ECA/P-IM and JC. There are several possible explanations for this state of affairs.

- Informal (i.e., personal or non-work-related) communication can hinder productivity as employees' energy is diverted from essential job responsibilities. Research shows that the influence of peers governs the amount and acceptability of IM behavior in the workplace (Block and Kollinger, 2007). Turner et al. (2006) demonstrated that employees whose usage of e-mail and IM was aligned with workplace norms received higher performance ratings. Thus, in order to enhance JC, one plausible solution is to have personal ICT usage mediated by organizational usage norms. Future research should investigate the mediating/moderating effects social bonding has on employee creativity.
- The study used generic job satisfaction and job creativity items. The measurements do not capture employees' creative aspects, e.g., innovativeness, playfulness, experiential job-related activities, and other unknown factors that could affect job creativity. For example, job insecurity reduces creativity, but it also increases unproductive behaviors (Probst, Stewart & Gruys, 2007).
- Job creativity may be related to other intangible incentives or job performance outcomes. Creativity related to work performance can also be predicted by organizational work and non-work support, while employees' positive moods play a moderating role (Madjar, Oldham & Pratt, 2002).
- The issue of "creativity" is subjective. Csikszentmihalyi (1997) suggested that creativity is a combination of culture, novelty or innovation and the evaluation of people within a specific domain of interest.
- The issues of "social creativity" in organizational contexts are an emerging area (Watson, 2007). Job creativity can result from various social and work-related interactions among individuals and teams.

Practitioners should acknowledge the limitations of this study. First of all, the study surveyed a small group of accessible employees working in the United States. Companies operating abroad may not have corresponding information and communication technologies (ICTs) in the workplace or they may operate under a different personal exchange culture. Second, other viable instruments designed to capture ECA, JS, JC, P-IM exist in the literature, even though the instruments used here were tested for construct validity and composite reliability. Third, since the correlation between job satisfaction and job performance is demonstrated to be .30 (Judge et al., 2001), it would be interesting to explore the relationships of the variables in the context of creativity. Fourth, the study assessed individual creativity which lacked other supporting evidence from research on work groups and teams. And finally, the study focused only on the personal usage of ICTs and instant messaging, assuming that these types of usage behaviors can potentially lead to negative consequences. Other work-related benefits of ICTs on job satisfaction and job creativity should be examined by future researchers.



## 5. Conclusion

The study examines the effects of electronic communication autonomy and personal instant messaging on job satisfaction and job creativity. The findings suggest that modern companies need to promote employees' freedom to utilize ICTs according to their work and social demands. With regard to job autonomy, employee electronic communication freedom improves employee creativity. However, personal instant messaging, as well as other related forms of semi-synchronous communications, diminish job satisfaction. Personal instant messaging should be monitored closely as it may not be beneficial in certain workplace settings.

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## Appendix A Measurement Items

### *Electronic Communication Autonomy (ECA)*

ECA1: I do not feel forced participated in these activities

ECA2: Engaging these activities is completely voluntary

ECA3: I do not feel obligated to engage in these activities

### *Job Satisfaction (JS)*

JS1: All in all, I am satisfied with my job

JS2: I would recommend this job to a good friend or family member

JS3: I am generally happy at work

### *Personal Instant Messaging (P-IM)*

Please indicate the number of times per week you engage in:

P-IM1: Instant Messaging with your peers or co-workers

P-IM2: Instant Messaging with family or friends

### *Job Creativity (JC)*

While at work, engaging in these activities helps me to

JC1: be creative in my job

JC2: be on the lookout for new ideas

JC3: experiment with new ideas while doing my job